

CLAIM AMENDMENTS

1. (Previously Presented) A method of demultiplexing a statistically multiplexed MPEG transport stream into a constant bit rate single program transport stream comprising the steps of:

separating a specified single program transport stream including a variable bit rate program composed of a sequence of pictures, each picture having a decode time stamp, from the statistically multiplexed MPEG transport stream;

loading each picture from the variable bit rate program into a smoothing buffer, the loading commencing a specified amount of time prior to the time indicated by the picture's decode time stamp; and

transferring the picture from the smoothing buffer at a desired constant bit rate at the time indicated by the picture's decode time stamp for decoding.

2. (Previously Presented) The method as recited in claim 1 further comprising the step of replacing B-type pictures at the input to the buffer with null B-type pictures when the smoothing buffer is in an overflow condition until the overflow condition ceases.

3. (Previously Presented) The method as recited in claim 1 wherein, in the event a picture cannot be loaded into the smoothing buffer the specified amount of time prior to the time indicated by the picture's decode time stamp, it is loaded into the smoothing buffer as soon as possible thereafter.

4. (Previously Presented) A method of rate shaping a single program transport stream from a variable bit rate, having a maximum bit rate of N , into a constant bit rate, having a bit rate less than N , the single program transport stream being composed of a sequence of pictures and the method comprising the steps of:

sequentially reading a decode time stamp from each picture, loading the pictures into a smoothing buffer, and

transferring the picture from the smoothing buffer for decoding at a rate that does not exceed the constant bit rate,

wherein if a picture of said sequence is loaded into the smoothing buffer no later than a specified amount of time prior to said picture's decode time stamp, then said picture is transferred from the smoothing buffer commencing the specified amount of time prior to the time indicated by the picture's decode time stamp, and

if a picture of said sequence is loaded into the smoothing buffer later than the specified amount of time prior to said picture's decode time stamp, then the transferring of said picture from the smoothing buffer commences as soon as possible.

5. (Previously Presented) A method according to claim 4, wherein the decode time stamps are periodic, at a period P , the desired CBR is R , a first picture of said sequence of pictures comprises X bits and commences transferring to said smoothing buffer at said specified amount of time prior to the first picture's decode time stamp, and an immediately succeeding picture commences transferring either at said specified amount of time prior to said second picture's decode time stamp, if X is less than $R \cdot P$, or as soon as the loading of said first picture is completed, if X is greater than or equal to $R \cdot P$.

6. (Previously Presented) A method according to claim 1, wherein the specified amount of time is proportional to a minimum acceptable size of said smoothing buffer and inversely proportional to said desired constant bit rate.

7. (Previously Presented) A method according to claim 3, wherein the decode time stamps are periodic, at a period P , the desired constant bit rate is R , a first picture of said sequence comprises X bits and commences loading at said specified amount of time prior to the first picture's decode time stamp, and an immediately succeeding second picture commences loading either at said specified amount of time prior to said second picture's decode time stamp, if X is less than $R \cdot P$, or as soon as the loading of said first picture is completed, if X is greater than or equal to $R \cdot P$.

8-9 (Cancelled)

10. (New) A method of demultiplexing a statistically multiplexed MPEG transport stream into a constant bit rate single program transport stream comprising the steps of:

separating a specified single program transport stream including a variable bit rate program composed of a sequence of pictures, each picture having a decode time stamp, from the statistically multiplexed MPEG transport stream;

loading a j 'th picture from the variable bit rate program into a smoothing buffer at a desired constant bit rate,

in the event that loading of the j 'th picture into the smoothing buffer is completed no later than a time δ before the time indicated by the decode time stamp of the $(j+1)$ 'th picture, loading the $(j+1)$ 'th picture into the smoothing buffer at said desired constant bit rate starting at the time δ before the time indicated by the decode time stamp of the $(j+1)$ 'th picture,

in the event that loading of the j 'th picture into the smoothing buffer is not completed until later than the time δ before the time indicated by the decode time stamp of the $(j+1)$ 'th picture, loading the $(j+1)$ 'th picture into the smoothing buffer at said desired constant bit rate starting substantially immediately after loading of the j 'th picture is completed, and

transferring the $(j+1)$ 'th picture from the smoothing buffer at the time indicated by the decode time stamp of the $(j+1)$ 'th picture.

11. (New) A method according to claim 10, wherein the smoothing buffer has a capacity equal to said desired constant bit rate multiplied by δ .